

Work Order ID 143683

Monday, March 21, 2016 9:56:09 AM

143683

Page 1

Item ID: D2600-3-130 Accept ***N9000040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Extrusion Round 3" 350
 Start Date: 3/21/2016 Start Qty: 50.00 ***50*** Cust Item ID:
 Required Date: 4/4/2016 Req'd Qty: 50.00 ***50*** Customer:
 Reference: replacement for w/o140804

Approvals: Process Plan: **DAS 13** Date: **MAR 30 2016** Tooling: Date: Run Start ***NR1***
 QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D2600	E

100	PURCHASING	0.00				<u>50</u>	<u>MAR 21 2016</u>	DAS 13 9-89
-----	------------	------	--	--	--	-----------	--------------------	--------------------

100
 Purchasing
 Purchasing

Memo
 Issue P/O: 30249
 a) Extrude as per Dwg D2600 (130" long)
 b) Material: 6061-T6
 c) Material certification is required.

EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS.

MUST BE WELL PACKAGE, IF NOT IT WILL BE REFUSE

110	Receive & Inspect for Damage & Mat'l Certs	0.00						
-----	--	------	--	--	--	--	--	--

110
 Packaging
 Packaging

Memo
 Ensure material certification is attached

54x 8016-03-22

Work Order ID 143683

143683

Page 2

Monday, March 21, 2016 9:56:09 AM

Item ID: D2600-3-130 Accept *N9000040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Extrusion Round 3" 350
 Start Date: 3/21/2016 Start Qty: 50.00 *50* Cust Item ID:
 Required Date: 4/4/2016 Req'd Qty: 50.00 *50* Customer:
 Reference: replacement for w/o140804

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC18 In-Coming Inspection Material Memo Check Pull test per Dwg D2600 for compliance page attached Check hardness with Webster tester <i>all length checked with dice 3g</i>	0.00 0.00				<u>54</u> pcs			DAS 16 9-89 2016/03/24
130 *130* Packaging Packaging	Identify as per dwg & Stock Location: _____ Memo LOCATION: LG002	0.00 0.01							<u>54</u> <u>16-3-24</u>
140 *140* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.08							MUS MAR 29 2016 MUS MAR 29 2016

Picklist Print

Monday, March 21, 2016 9:56:07 AM

Page 1

Work Order ID: 143683

143683

Parent Item: D2600-3-130

D2600-3-130

Parent Item Name: Extrusion Round 3" 350

Start Date: 3/21/2016

Required Date: 4/4/2016

Start Qty: 50.00

Required Qty: 50.00

Comments: IPP REV:A 14.01.14 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D2600-3-130P

Purchased

No

Each

0.0000

D2600-3-130P

Extrusion Round 3" 350

**

50 54X
54X 50/6-02-22

SPECIFICATION CONTROL DRAWING

D2600-X-XXX EXTRUSION

NOTES:



1) MATERIAL: 6061-T6 ALUMINUM PER QQ-A-200/8 OR AMS-QQ-A-200/8 OR ASTM B221

MINIMUM TENSILE YIELD STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 40 KSI
MINIMUM ELONGATION = 8%

A SAMPLE FROM EACH BATCH WILL BE PULL TESTED TO ASTM STANDARD B221 BY AN APPROVED TESTING FACILITY TO ENSURE THAT THE BATCH MEETS THE ABOVE MINIMUM MECHANICAL PROPERTIES

2) FINISH: N/A

3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED

4) UNITS: INCHES UNLESS OTHERWISE NOTED

5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX

6) IDENTIFICATION: IDENTIFY WITH DART P/N & B/N PER DART QSI 044 6.1 (FINE POINT PERMANENT INK MARKER)

7) WEIGHT: D2600-1 = 0.078 lb/in, D2600-3 = 0.130 lb/in, D2600-5 = 0.045 lb/in, D2600-7 = 0.091 lb/in

8) NO TOOLING MARKS

9) FOR D2600-1, PART NUMBER IS D2600-1-XXX WHERE XXX IS CUT LENGTH (EX. D2600-1-160 IS 160" LONG).
D2600-1 EXTRUSION MANUFACTURED FROM:

- CARADON INDALEX DIE # MH-18870
- SIGNATURE ALUMINUM (BON-L) DIE # 897121

10) FOR D2600-3, PART NUMBER IS D2600-3-XXX WHERE XXX IS CUT LENGTH (EX. D2600-3-120 IS 120" LONG).
D2600-3 EXTRUSION MANUFACTURED FROM:

- CARADON INDALEX DIE # MH-18859
- SIGNATURE ALUMINUM (BON-L) DIE # 897122

11) FOR D2600-5, PART NUMBER IS D2600-5-XXX WHERE XXX IS CUT LENGTH (EX. D2600-5-108 IS 108" LONG).
D2600-5 EXTRUSION MANUFACTURED FROM:

- CARADON INDALEX DIE # MS-18871

12) FOR D2600-7, PART NUMBER IS D2600-7-XXX WHERE XXX IS CUT LENGTH (EX. D2600-7-125 IS 125" LONG).
D2600-7 EXTRUSION MANUFACTURED FROM:

- CARADON INDALEX DIE # MS-18872

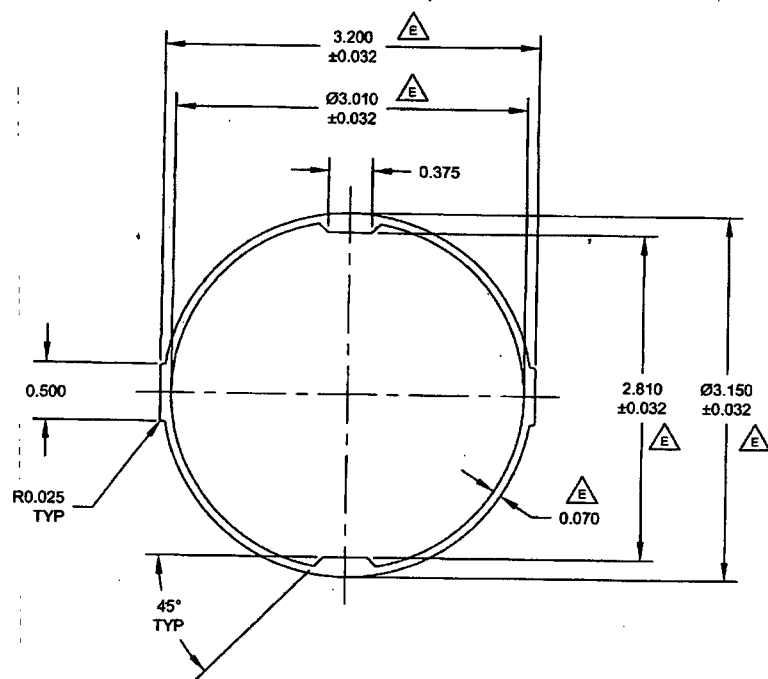
DAS
13
9-89

MAR 21 2016

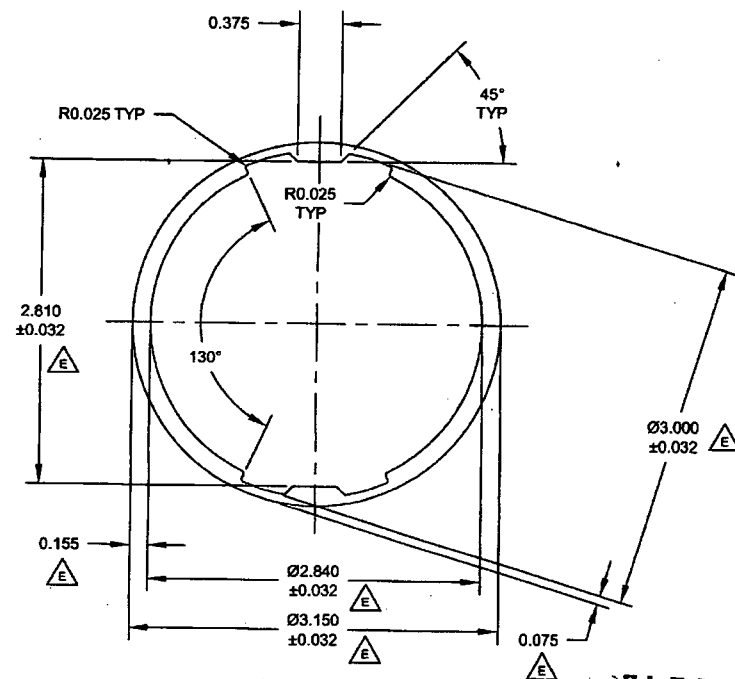
W/O: 143683

RELEASED
R 2012-01-11

E	REFORMAT DWG; ALL DIMS & TOL. UPDATE TO MATCH MFG DIE DWGS; ADD ASTM B221 SPEC (D8-1)	CP	11.10.18
D	INCREASE MIN. UTS TO 40 KSI	DS	98.08.20
C	ADD D2600-3, UPDATE D2600-1 WIDTH, ADD DIE NO.	DS	98.04.16
B	CHANGE MATERIAL SPEC.	DS	97.09.09
A	NEW ISSUE	DS	97.01.21
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>JS</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	<i>JS</i>		
CHECKED	<i>JS</i>	DRAWING NO.	REV. E
MFG. APPR.	<i>JS</i>	D2600	SHEET 1 OF 3
APPROVED	<i>JS</i>	TITLE	SCALE
DE APPR.	<i>JS</i>	EXTRUSION	NTS
DATE	11.10.18	COPYRIGHT © 1997 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



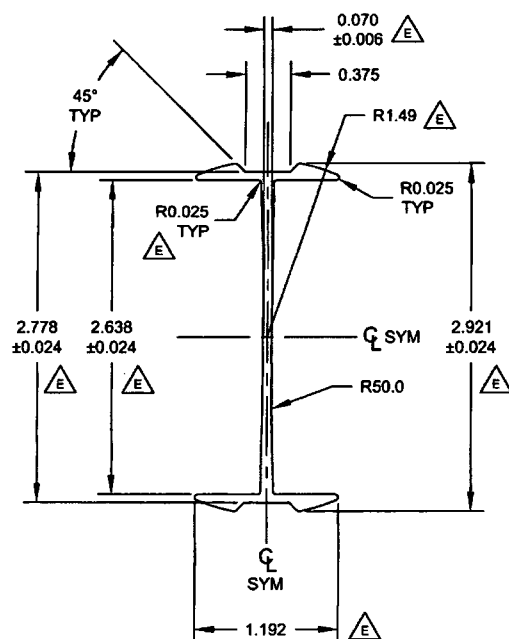
D2600-1 EXTRUSION



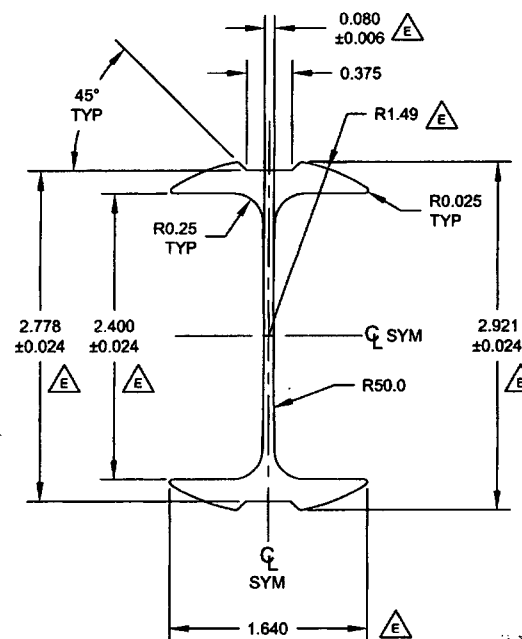
D2600-3 EXTRUSION

RELEASED
2012-01-10

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED	ASS	DRAWING NO.	REV. E
MFG. APPR.		D2600	SHEET 2 OF 3
APPROVED		TITLE	SCALE
DE APPR.		EXTRUSION	NTS
DATE	11.10.18	COPYRIGHT © 1987 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



D2600-5 EXTRUSION



D2600-7 EXTRUSION

RELEASED
2012-01-11
MD

DESIGN	<i>4</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	<i>ASS</i>		
CHECKED	<i>ASS</i>	DRAWING NO.	REV. E
MFG. APPR.	<i>EL</i>	D2600	SHEET 3 OF 3
APPROVED	<i>EL</i>	TITLE	SCALE
DE APPR.	<i>EL</i>	EXTRUSION	NTS
DATE	11.10.18	COPYRIGHT © 1997 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

OUTSTANDING PO REPRINT

Purchase Order ID PO30249

Purchase Order Date 10/23/2015

PO Print Date 3/21/2016

Page Number 1 of 1

Order From : VC-BON001
SIGNATURE ALUMINUM CANADA INC.
C/O/ T10322C
P.O. BOX 4488, STN A
TORONTO, ON M5W 4H1
CA

Ship To : DART AEROSPACE LTD
1270
ABERD
EEN
HAWKE
SBURY,
ON
K6A
1K7
CANAD
A

Contact Name		Buyer	Chantal Lavoie
Vendor Phone	905-427-6550	Customer POID	
Vendor Fax	905-427-2246	Customer Tax #	10127-2607
Ship To Contact		Terms	Net 30
Ship To Phone		Currency	CAD
		FOB	Destination-Collect
Ship Method	Yours ppd		
Ship Acct			

Line Nbr	Item ID Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable	Req Qty	Extended Price
4	D2600-3-130P	Extrusion Round 3" 350	4/4/2016 Yes 4/4/2016	50.00 Each	\$2,355.86
REPLACEMENT ORDER EXTRUDE AS PER DWG D2600-3-130 REV. E B143683 DIE # DDA-897122 LENGHT 130"					
EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF TUBE MATERIAL MUST BE SMOOTH AND FREE FROM DEFECT SCRATCHES,NICKS,DENT					

Line Total: \$2,355.86

Outstanding PO Total: \$2,355.86

Change Nbr: 5

Change Date: 3/21/2016

Terms & Condition of
Purchasing(Suppliers) and
Procurement Quality Clauses are an
integral part of our AS9100



**signature
aluminum
CANADA INC.**

CERTIFICATE OF COMPLIANCE

SIGNATURE ALUMINUM CANADA

1850 CLEMENTS RD
PICKERING, ON L1W 3R8

Cert Date	Cert No.	Sales Order	Page
03/20/2016	5381027	123001	1
Cust PO	B/L No	Lot	Date
30249 REPLACEMENT	025233	863773	03/21/16

Sold To	Ship To
46024 DART AEROSPACE LTD. 1270 ABERDEEN ST. HAWKESBURY, ON K6A 1K7 CANADA	46024 DART AEROSPACE LTD. 1270 ABERDEEN ST. HAWKESBURY, ON K6A 1K7 CANADA

Item No	Part No	Item Description	Cust Part
001	DAA-897122-2	130" Mill 6061 T6	D2600-3-130P
Gross Weight	981 LBS		
Net Qty	937 LBS 54 PCS		2 PKGS
Specification	AMS-QQ-A-200/8 & ASTM B221-08		Die Desc

Mechanical Tests:

Tensile	Yield			
MPA / KSI	MPA / KSI	% Elongation	Conductivity	HRE
306.9 / 44.5	290.4 / 42.1	14.2	N/A	94

Chemical Analysis:

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	V	Zr
0.61	0.22	0.19	0.03	0.90	0.06	0.02	0.01	0.01	0.00

516103/23.

This Material is Made in Canada

This Material is RoHS Compliant

This will certify that the material described herein has been inspected and tested in accordance with Signature Aluminum Canada's standard sampling and testing procedures or in accordance with the requirements of any specification forming a part of the material description to the extent indicated herein. Data of chemical composition for the material and test results from samples representative of the material are set forth above hereof or in any attachments hereto. This information shows that the material meets the applicable requirements. Inspection and test records are maintained on file. This certificate shall be deemed apart of and subject to the terms and conditions of warranty set forth on the reverse side of our order acknowledgement form. No other warranties are applicable.

S. Mazzotta
Director of Quality
Signature Aluminum Canada Inc



ISO 9001/TS16949 Registered Company

Visit us at www.signaturealum.com

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: D2608-2-130
 DATE: 2016/03/23

PO / BATCH NO.: B143683 /
PO # 30249.

MATERIAL CERT REC'D: YES
 QUANTITY RECEIVED: 54 PCS
 QUANTITY INSPECTED: _____
 QUANTITY REJECTED: _____

THICKNESS ORDERED: n/a
 THICKNESS RECEIVED: n/a
 SHEET SIZE ORDERED: n/a
 SHEET SIZE RECEIVED: n/a

* Extrusion

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	☒	
CORRECT FINISH	☒	N	
CORROSION	Y	☒	
CORRECT GRAIN DIRECTION	☒	N	
CORRECT MATERIAL	☒	N	6061 T6
CORRECT THICKNESS	☒	N	see attached inspection sheet, 5
PHOTO REQUIRED	Y	☒	
CORRECT MATERIAL	☒	N	AMS - 404-A - 20018
CORRECT REF # TO LINK CERT	☒	N	PO # 30249
CORRECT MATERIAL IDENTIFICATION	Y	N	also
CORRECT M# ON THE MATERIAL	Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	☒	
DOES THIS REQUIRE AN EXTRUSION REPORT	☒	N	Inspection sheet attached

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	16
SIZE OF TEST SAMPLE	n/a	n/a	n/a	n/a	
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 13 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>TB 9-89</u> DATE: <u>2016/03/24</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

INSTRUCTIONS FOR INSPECTING BAR, TUBING, ROUND, & SHEET STOCK

- 1- VERIFY STOCK TO DART PURCHASE ORDER
- 2- MEASURE ALL DIMENSIONS FOR EACH PURCHASED STOCK
 - a. WIDTH, THICKNESS, DIAMETER, WALL THICKNESS & LENGTH
- 3- VERIFY CONDITION OF MATERIAL i.e. DAMAGED, CORRODED, etc.
- 4- VERIFY THAT SUPPLIER HAS A NUMBER (HEAT #) ON ITS RECEIVING REPORT TO LINK TO MATERIAL CERTS
- 5- VERIFY MATERIAL CERTS ARE CORRECT TO THE DART PO INSTRUCTIONS
- 6- REMOVE / CUT A PIECE OF MATERIAL FOR SAMPLE HARDNESS TESTING

INSTRUCTIONS FOR INSPECTING SKIDTUBE & STEP EXTRUSION

- 1- VERIFY TO DART SUPPLIED DRAWING
- 2- SAMPLE INSPECT MATERIAL IN BUNDLE TO ENSURE MATERIAL CAN BE RECEIVED INTO DART
- 3- USING PORTABLE HARDNESS TESTER VERIFY HARDNESS OF THE MATERIAL TO THE DRAWING
- 4- VERIFY THAT MATERIAL CERTS MATCH TO WHAT'S CALLED UP ON THE DART DRAWING

AFTER MATERIAL PASSES INSPECTION

- 5- HAVE DART EMPLOYEES START STOCKING MATERIAL BUT REQUEST MIN **20pcs** FOR FULL INSPECTION
- 6- INSPECT ALL DIMS AS PER DRAWING REQUIREMENTS

INSTRUCTIONS FOR INSPECTING CROSS TUBE MATERIAL

- 1- VERIFY MATERIAL CERTS MATCH THE REQUIREMENTS ON THE DART DRAWINGS
- 2- INSPECT MIN. HALF THE BATCH OF EXTRUSION RECEIVED INTO DART
- 3- INSPECT MATERIAL AS PER THE EXTRUSION REPORT
 - a. WALL THICKNESS USING ULTRA-SONIC IN 4 LOCATIONS
 - b. OUTSIDE DIAMETER HIGHEST/LOWEST BOTH ENDS
 - c. INSIDE DIAMETER HIGHEST/LOWEST BOTH ENDS
 - d. STRAIGHTNESS @ CENTER OVER 12" SPAN
 - e. WALL THICKNESS USING TUBE MICROMETER HIGHEST/LOWEST BOTH ENDS
- 4- IDENTIFY EACH TUBE IN SEQUENCE OF INSPECTING (TUBE 1, TUBE2.....) AND W/O# AND PO#
- 5- RECORD ALL FINDINGS ON EXTRUSION REPORT

IF ANY QUESTIONS PLEASE SEE QC COORDINATOR BEFORE GOING FURTHER

